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ABSTRACT

Two government documents, "Goals for Americans" and "Toward Balanced Growth: Quantity with Quality" (ED 055 009), together with previous documents, serve as the information source and basis of this guide. The "Goals for Americans" report, initiated by President Eisenhower's Commission in 1960, identified social priorities in terms of social problems. The "Toward Balanced Growth" report, transmitted to President Nixon in 1970 by the National Goals Research Staff, focused on economic growth and its relationship to and impact upon the quality of life. The purpose of this paper, which emphasizes quality of life and economic growth, is to show how the presidential reports may be used as guidelines by educators to introduce new ideas into the classroom -- helping teachers to make the teaching of social sciences more relevant and helping students to develop a greater respect for the political processes of American society. Following an introduction which discusses the two governmental reports in some detail, the paper is arranged by seven topics: Population Growth and Distribution; Environment and Balanced Economic Growth; Education; Basic Natural Science; Technology Assessment; Consumerism; and Economic Choice and Balanced Growth. Under each topic a list is provided of classroom learning activities which encourage students to use the problem solving approach toward dealing with social problems. (SJM)

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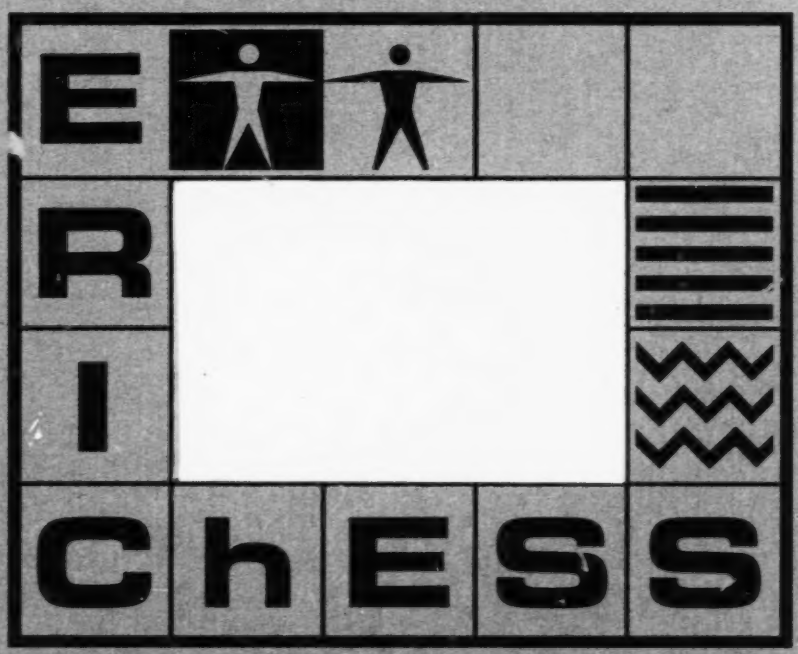


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# QUALITY OF LIFE

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All figures taken from: National Goals Research Staff, Quantity With Quality. Washington, D.C., U. S. Government Printing Office, July 4, 1970. 226 pp. $1.50.

## Preface

The author used two Presidential reports as a basis of this paper. One Presidential report was initiated by President Dwight D. Eisenhower's Commission on National Goals. Entitled Goals for Americans, this report identifies social priorities in terms of social problems. The other Presidential report was initiated by President Richard M. Nixon's National Goals Research Staff and is entitled Toward Balanced Growth: Quantity with Quality. The topic of this report is economic growth and its relationship to the quality of life.

The subject matter of this paper is social priority as a national goal. It demonstrates how the cutting edge of knowledge is applied to the formulation of public policy, and how scientists, civic leaders, and political leaders communicate with each other for the purpose of identifying national priorities and discovering ways of incorporating these priorities into our social system.

In presenting the main ideas of these Presidential reports the author made use of other governmental documents, such as reports on Congressional hearings, through which students will gain an insight into the drama of the political process. The author attempted to build a bridge between these documents and the curriculum by constructing sample classroom activities for various grades.

The political system in a democratic society must be responsive to the people's wishes and demands. Sometimes these demands are in conflict and sometimes they are changing due to changes in science, technology, and value preferences. To compromise between conflicting demands and to accommodate the process of change, the U.S. Congress conducts hearings, and executive departments form special councils and committees made up of scientists, civic leaders, and political leaders.

This paper introduces some of the most important recent documents that demonstrate the interaction among scientific inquiry, value preferences, and the political processes. The American social system is increasingly under scrutiny to meet the multiple demands of the various interest groups. This paper attempts to reflect the drama of this political process.

It is hoped that the paper will help teachers make the teaching of social sciences more relevant and help students to develop a greater respect for the political process of our society.

Lawrence Senesh

## Introduction

Americans have reached a milestone in their national thinking. Isolated social problems have always been discussed, but their interrelationships were not considered. Usually social problems have been identified with a goal that could be expressed in conventional statistical measurements. Now a goal, quality of life, has been identified. As yet there are no conventional measurements for this goal.

The nation is developing new horizons. It is very important that the schools take notice and introduce them into the curriculum. For the first time the schools have been encouraged by the government to recognize a social value that is near to the heart of young people. This is the search for quality of life. Organizing a curriculum around the quality of life could become most meaningful for our public schools.

These questions of "What is quality of life?" and "What is economic growth for?" may open new vistas in the classroom.

On July 4, 1970 the National Goals Research Staff of the White House transmitted to the President of the United States a report entitled: Toward Balanced Growth: Quantity with Quality. The report breaks a new path by identifying and appraising the social goals of our nation. Instead of seeing every public decision in isolation, the report helps us to discover the interrelatedness of the multitudes of programs and decisions that individuals, businesses, and governments are making. The report enlarges our horizon. Instead of stressing the immediacy of the issues, it attempts to show how issues relate to each other at any one time and how decisions of today relate to decisions of the future. The report shifts the emphasis from isolated short-run programs to long-range policies.

The report helps us to discover that economic growth, in terms of producing more and more goods, is an inadequate measure of welfare if the costs of growth that society must bear are not considered. The report invites us to see our society as a system where the thousands of parts intricately relate to each other. Toward Balanced Growth warns us that if this interrelatedness is not recognized, socially undesired outcomes may result, causing serious damage to the intricate mechanism of our social system.

The document encourages citizens to participate in the democratic society by identifying the goals they expect from the economic, political

and cultural systems. To acquire "system awareness," citizens might look on the social system as a sensitive mobile, with each arm and sub-arm representing a social priority. The length of the arm represents the intensity of the priority. The length and the shape of the arm affect the lengths and the shapes of the other arms, and the intricate balance of the entire mobile.

In much the same way the social priorities of 200 million people form an intricate balance. This balance of the social priorities is a dynamic one. With the development of science and technology, new social priorities emerge. With the changing values and power relationships, the priorities among the existing social goals shift. All these changes affect the balance among priorities, and the social system seeks a new equilibrium.

The report of the President's staff serves as a warning to the thousands of specialists engaged in business and government to judge their contributions not on their own merits but on how their contributions affect the rest of society.

Our highway engineers may build the best highways in the world, but in their enthusiasm they may jeopardize the health and lives of millions of citizens and destroy the beauty of the countryside.

Our corps of engineers may build the greatest dams in the world, but in their efforts they may forget the side effects of their work. They may flood beautiful countrysides and jeopardize the fish life of our rivers, and by using the water for irrigation may aggravate the problem of agricultural surpluses.

Our engineers may build the largest and fastest machines, which eat up raw materials and turn out manufactured goods at an ever faster rate, but in their preoccupation to produce more in a shorter time they forget that with every ton of goods a ton of "bads" is also produced. Their "efficiency" may contribute to air, water, and noise pollution. Industrial activities also lead to increasing urbanization and more unequal distribution of population. The population tends to move to the highly concentrated industrialized areas, deserting the rest of the country.

The report can also serve as a guideline to educators. It may help to build a new social science curriculum without the high walls separating the various academic disciplines today. This paper may help to develop a social science curriculum that will introduce our society as a goal-oriented system.

The report can do these things if it becomes known to citizens, specialists, policy makers, and educators. Past experiences have shown that many significant government documents prepared by leading scholars of our society never make a ripple in our thinking because they have not been read or because no one has cared enough to channel these ideas into the common stream of knowledge. The purpose of this paper is to show how this government document, together with some previous ones, may be used as stepping stones by educators to introduce new ideas into the classroom.

The American social system is an exciting system. It has been searching for goals since the birth of our nation. These goals have lifted our sights. Alfred North Whitehead said: "The vigor of civilized societies is preserved by the widespread sense that high aims are worthwhile. Vigorous societies harbor a certain extravagance of objectives so that men wander beyond the safe provision of personal gratifications." These high aims were eloquently expressed in the Declaration of Independence 200 years ago: "We hold these truths to be self evident: that all men are created equal, that they are endowed by their Creator with certain inalienable rights, that among these are life, liberty and the pursuit of happiness, that to secure these rights, governments are instituted among men deriving their just powers from the consent of the governed." The preamble to the Constitution committed our nation to the belief that man is basically good and can be directed toward higher and nobler aims. This idea is in contrast with the ideas of those who believe that human nature cannot be trusted, that men are not much better than beasts, that they are selfish jealous creatures, and that they think only of themselves.

The idea expressed in the Declaration of Independence identified a noble goal for our social system 200 years ago. Many of us have wanted to live up to it ever since. Americans who have fought for public education, against discrimination, for free immigration, against poverty, for religious freedom, against child labor, for labor unions, against big business, for a better environment--all these Americans have been helping to translate the American goals of "life, liberty, and the pursuit of happiness" into reality.

The founders of our nation were innovators. They dramatized their faith and purpose in the Latin phrase which appears on the great seal of the United States: "Novus Ordo Seclarum--a new order for new ages." Our society measures men's actions against the ideas expressed in the Bill of

Rights. Since the Declaration of Independence, national goals have been designed and redesigned many times. The inaugural and farewell messages of the Presidents and the State of the Union messages are all outward manifestations of the American desire to identify goals for our economic, political, and cultural system.

During the Great Depression, President Franklin Delano Roosevelt identified new goals for our economic system. The United States Congress passed the Employment Act of 1946. It committed our government to a public policy of enough economic growth to assure jobs for an increasing population and for those displaced by technology. The Employment Act of 1946 made the economic system a goal-oriented system for full employment.

## Goals for Americans: Higher Standard of Living

In 1960 President Dwight D. Eisenhower established a Commission on National Goals. The purpose of this Commission was to develop a broad outline of coordinated national policies and programs and to set up a series of goals in various national activities. The report, Goals for Americans, made an important contribution by identifying programs for the nation, at home and abroad, in the major areas of human endeavor. It failed to coordinate the different programs into one major, unified system in which the interaction of the various recommended programs could be measured. That is, the Eisenhower report, through its program approach, did not show any interrelationships among the various programs; there is no unified goal for the whole system, and each program is considered in isolation. The Nixon report, however, attempts to consider the social system at large. Nevertheless, the first report could have served as a guideline for a problem-oriented social science curriculum.

On November 16, 1960 the President's Commission on National Goals identified social priorities for the nation:

1. How can our society create an economic, political, and cultural environment in which each individual may develop his or her capabilities and everyone may enjoy equal opportunity?
2. How can our society provide economic opportunity and full political participation for everyone, regardless of race, creed, and religion?

3. How can our society assure freedom for everyone in such a way that one does not abridge the freedom of others?
4. How can our society establish an educational system that meets the educational needs of our young population in an increasingly complex world?
5. How can our educational system provide increasing scientific and technological competence so as to increase our standard of living and military strength?
6. How can our educational system strengthen our competence in arts and humanities?
7. How can the income of the American farmer be increased without creating burdensome surpluses?
8. How can the welfare of the American people be increased in terms of better housing and living conditions?
9. How can our social system assure adequate health and medical care for all Americans?
10. How can our society prevent crime and control juvenile delinquency?
11. How can our nation protect and promote the welfare of the free world?
12. How can the free world help the people in underdeveloped areas to increase their standard of living?
13. What can the world's free nations do to control the armaments race and still establish peace?
14. How can the United States and the rest of the world strengthen the prestige of the United Nations?
15. How can the social system of our government be improved to support the goals of this nation at home and abroad?

Students studying these problems will feel that they are shareholders in a free society by identifying themselves with these social issues.

A useful method of study is the problem approach, the steps of which are: 1) study the symptoms of the problem; 2) define the problem; 3) determine its aspects or scope; 4) determine the causes; 5) find solutions.

## Classroom Ideas for Teachers

Teachers may take any of these problems, such as poverty, and guide the students through the various steps of the problem approach, including symptoms, definition, scope, causes, and solutions. The classroom may study the symptoms of the problem, that is, the outward manifestation of poverty: dilapidated housing, neglected neighborhoods, ill-fed children, etc.

After the students have observed the problem, the class may study why a nation should be concerned about a social problem. Some students may study the economics of poverty; others may study the politics of poverty; while still others may study the culture of poverty, the sociology of poverty, or the ethics of poverty. Now the class is ready to define the problem of poverty in terms of the conflict between our societal concern and existing institutions: How can our society assure a decent income and livelihood for all the people of this country commensurate with our scientific and technological know-how?

The class then will study the scope of the problem. Here the students will learn the use of statistical data as a measurement of the social problem. They will collect information on income distribution of the United States, on health conditions, nutritional standards, unemployment, and statistical data which correlate broken homes and low income.

The class then may use some of the analytical tools of social scientists to study the causes of the problem. At this point the students and teacher are learning social theory. They are applying theory to social situations instead of presenting theory without any relatedness to reality.

Finally, the students may study existing private and public policies and proposed private and public measures to offer solutions to the problem. Students will investigate what individuals, volunteer groups, and the government can do on local, state, and federal levels to cope with the problem of poverty. The class should remember that no social problem can be studied in isolation from the rest of the social systems, so it is important that students should be able to discover how private and public policy affect the other sub-systems of the social system. For example, guaranteed annual

income may affect the initiative of the families to accept work; lowering the retirement age as a mode of giving more chances to young people may affect the rate of economic growth of this country and the rate of population increase.

## Goals for Americans: Quality of Life

The report, Toward Balanced Growth: Quantity with Quality, takes a giant step forward. The report identifies one of the most significant national goals--economic growth. Then it asks: Can we afford to be so single-minded with our preoccupation with a higher standard of living without considering the quality of life? The report attempts to investigate the interrelationship between our effort to increase our industrial production on the one hand and the quality of life on the other. "Quality of Life" is never clearly defined in the report but is mentioned as a new priority in contrast to the old priority of perpetual satisfaction of the appetite for material goods. The new priority demands that a part of our resources be conserved and shifted to the improvement of the environment.

The report of the National Goals Research Staff looks upon the social system as a vast goal-oriented system in which everything relates to everything else. The report begins with the introductory statement of Dr. Daniel P. Moynihan, Counsellor to the President, in which he indicates the necessity of taking the broad system outlook. This has been brought about by many forces:

1. It has been brought about by the restlessness of the American people searching for the achievement of larger and larger goals. We need more knowledge of the forces that promote these goals and how they relate to other goals.
2. It has been brought about by our advances in technology, which have enabled us to accomplish many tasks, but in the process of accomplishing the task we have neglected others. By satisfying one we paid dearly for another. The accomplishment of one task does not impress us very long. The landing on the moon did not set off any great cycle of national self-congratulation. Many people wondered how it is that we can land on the moon, but we cannot clean up

the mess in our cities.

3. The necessity of taking the system outlook was brought about by the recognition of some of the unexpected outcomes of seemingly isolated government programs. For example, in the course of getting the youth into the army at the lowest cost, the Selective Service System had a profound influence on the national youth policy. The draft meant that youth of higher social status were in considerable measure excused from fighting in a difficult and dangerous war.

4. We need the vision of the system outlook because of our great opportunity for incorporating new priorities into our social system. It is estimated that our Gross National Product (GNP) will increase by 500 billion dollars in the next ten years. This increase alone is greater than the entire growth of the American economy from 1790 to 1950. This high rate of economic growth gives an opportunity to shift our preference from producing more and more goods to the demand for new and better services which will better the quality of life. We are slowly discovering that the desire for more and more goods has caused us to neglect our environment and our human relationships and to have left many peoples and regions behind. In the process of striving for individual achievement we have neglected a large segment of the American population not participating in the competitive system due to subcultural differences, discrimination, or both. By promoting individual needs and the accumulation of private wealth, we have neglected our public needs--transportation, housing, health, education, and our cultural needs in the creative arts. The private sector cannot satisfy these needs.

5. The need for the system outlook was brought about by the enormous complexity of our social system. Science and technology today can create such vast dislocations, hardships, and threats to our civilization that we cannot afford surprises. We must anticipate changes instead of being surprised by them. We need a corps of well-trained

specialized civil servants who are competent in using the nation's goals as a basis for projected future trends, necessary to master the process of change. If the identification of the national goals and the projection of future trends are clearly stated, the American people can be involved in the dialogue of formulating the nation's goals and can observe the achievements of the government in accomplishing these goals. The more efficiently the government can communicate the social goals of the nation, the greater and more effective will be the political participation of the people.

6. The system awareness may also create discontent with the present national trends and goals and spur the people and the policy makers to redefine the goals of our system.

The Employment Act of 1946 set forth the national goal of promoting "maximum employment, production, and purchasing power." But as years passed we discovered that the Act did not help Blacks and the young workers. The unemployment of Blacks and youth rose, and this condition generated social unrest. So to achieve this national goals, the Economic Opportunity Act of 1964 was passed. The Act went beyond the "maximizing standards" of the earlier legislation. The Act proclaimed that its purpose was to "eliminate the paradox of poverty in the midst of plenty in this nation..." The Economic Opportunity Act of 1964, complementing the Employment Act of 1946, broadened the nation's goal by inviting a segment of the population into the labor market which otherwise had not been included.

The theme of the 1970 report, Toward Balanced Growth, is economic growth and its impact upon the quality of life. This introduces a new goal, the quality of life. The report investigates how this new goal can be coordinated with the desire for a higher standard of living. This new goal challenges the goal set by the Employment Act of 1946 and the Economic Opportunity Act of 1964. We are not satisfied with full employment alone: we want an environment that offers jobs, but one that complements this economic existence with health and beauty, one that enhances man's desire for these goals.

"We grew geographically, as we stretched across a continent and tamed the West. We grew in population, as hope for a better life drew millions across the ocean. We grew in wealth, as our farms became more productive and as the special American genius for organization devised ever more effective means of producing and distributing an ever wider array of increasingly sophisticated goods. We grew in strength as we responded to the call of our beleaguered allies in two world wars, and as we finally found ourselves, without having sought it, in a position of world leadership. We grew in understanding, as more of our people acquired the benefits of more education. We grew in our scientific and technological capabilities, in the reach and complexity of our social institutions, in our level of social awareness and concern, in the excellence of our arts and culture, and in our knowledge of the forces of nature.

But increasingly, we have become aware that growth is not enough. We have become alarmed at the threats to our environment posed by industrial and technological progress. We have developed a new and acute awareness that the quality of life cannot be measured in quantitative terms."

The 1970 report discusses economic growth and its relationship to the various aspects of American society. It discusses population and how economic growth affected its growth and distribution. It discusses the environment and how the emphasis shifted from the problem of our producing food, energy, and materials to the problem of absorbing waste. It discusses education and how education may serve to improve man's sensitivity toward his environment. It discusses the basic natural sciences and how suspicion grew against them, because of their abuse and the conquest of nature. It discusses technology and how an awareness developed of assessing its impact, not only in terms of the benefits but also in terms of the costs to society. It discusses consumerism and how, paradoxically, increasing consumer choices limited the freedom of the consumer because of the inadequate information on which he could base his choices.

## Classroom Ideas for Teachers

The introductory statement of Counsellor Moynihan opens the opportunity for curriculum builders to teach the following ideas:

WHAT IS A SYSTEM?

1. To help students understand the meaning of systems, the teacher can ask the class to name those combinations of

things that are commonly referred to as systems. Afterward, the teacher should list on the chalkboard the students' discoveries, which could include the following: telephone system, sewage system, transportation system, park system, court system, housing system.

2. To help students understand that a system is the interaction of two or more parts, the teacher should ask them to identify the things (systems) in the classroom that have parts working together to "get something done." Answers, which the teacher may write on the chalkboard, could include such things as the pencil sharpener, a pair of scissors, a light bulb, a door lock. After discussing various classroom objects the teacher might suggest looking upon the class itself as a system. What are its parts? (Boys and girls--students interacting through trading ideas to become more educated.) How about a student? Is he a system? Yes, he is a system with interacting parts. The brain has the ideas and the heart, liver, arms, and legs work together to fulfill these ideas.

3. To help students understand that there are many, many systems--some with goals, some without goals--the students may be divided into three committees. One committee will work to find systems in the home or within the family. Examples are father, mother, children, family, heating system with thermostat, electric refrigerator, (goal-oriented); water, sewing machine, plumbing, (non-goal-oriented). Committee number two can list all of the systems located in the city (e.g., water system, sewage system, fire protection system, political or governmental system, a business, (e.g., one store), identified as an economic system). Committee three can list systems on the national level (e.g., the Federal Government, the highway system, defense system, court system, banking system, social security system, river system, national park system). Each committee can report on how all of the systems are made up of many parts and how the parts work together. The children can also explain who

created the systems, pointing out that some systems have been created by man and others have been created by nature.

The children can also identify the different kinds of man-made systems. Some systems can be identified as mechanical systems. Others can be identified as social systems, which have been created to help people work together to make a living, to better their relationships with other people, to help people achieve greater security, independence, and happiness. Man has also modified natural systems, for example, by draining swamps or stocking streams with fish. The committees can also report on how the job of most of these systems is to have the parts work together to accomplish some task.

This committee should emphasize that sometimes the working together of the parts of a system (or sub-systems) is not a smooth process. For example, if the city is considered as a system, it is very difficult to make the different sub-systems, such as the highway department, the park department, and the zoning board, work together for a common goal. The greatest difficulty is that they may not even agree on the common goal. Similar difficulties may arise in the family when some members may want to go "their own way." The children should discover that some systems are not goal-directed systems. (For example, the river system is not a system to assure a water supply for man or to assure a water level that will not change.)

WHAT IS ECONOMIC GROWTH?

The class may discuss the meaning of economic growth, and how to measure economic growth, in terms of the value of goods and services and in terms of income and employment. With the help of the Statistical Abstract, students may prepare a chart showing the development of the Gross National Product in constant dollars since 1776.

WHAT IS THE QUALITY OF LIFE?

Students will discuss the benefits that an increasing Gross National Product has brought to individual families and to

society. The students may discuss whether they think that the quality of life is better today than ten, twenty, or fifty years ago. The teacher may have the students compare the art works of some early landscape painters, such as Homer, Moran, Cole, and Church, to photographs of the same areas as they exist today. Students may also read some of the poetry describing the romantic period and see if they can write about today in the romantic style. Students may be divided into two groups. One group is made up of those who feel that the quality of life has improved, and the other group of those who feel differently. Each group will select a leader to debate whether the quality of life has improved or deteriorated in the last fifty years. After the debate, the class realigns itself. Each student who shifted his allegiance will explain the reason for his change. Reasons for change may be more information, clarification of definition, or changed values.

WHAT SOCIAL TRENDS INDICATE INCREASES OR DECREASES IN THE QUALITY OF AMERICAN LIFE?

Students should check the following indicators and discuss their differences concerning the definition of the meaning of "quality of life":

| Social Trends (Indicators) | Increases in Quality (Ups) | Decreases in Quality (Downs) |
|---|---|---|
| 1. Government expenditures on human resource development | Students may fill out this check list and use it as a basis to demonstrate the quality of life, discuss various values, and arrive at sound compromise. | |
| 2. Government expenditures on housing and development | | |
| 3. Government expenditures on highways | | |
| 4. Government expenditures on local parks and recreation | | |
| 5. Divorce rate per 100 | | |
| 6. Expenditures on admissions to the theater and opera | | |
| 7. Juvenile delinquency cases | | |
| 8. Crime rates | | |

| Social Trends (Indicators) | Increases in Quality (Ups) | Decreases in Quality (Downs) |
|---|---|---|
| 9. Cost of maintaining personal and household possessions | | |
| 10. Life expectancy | | |
| 11. Expenditures per student in elementary and secondary schools | | |
| 12. Per capita personal consumption expenditures | | |
| 13. Number of rehabilitated persons | | |
| 14. Labor force participation rates for children | | |
| 15. Consumer expenditures for books and maps | | |
| 16. Industry provides the same goods of many different varieties | | |
| 17. Government subsidizes oil producers | | |
| 18. Atomic power plant in Vermont cancelled | | |
| 19. GNP increased by $10 billion | | |

WHAT IS A GOAL-ORIENTED SYSTEM?

Students may study the following social problems using the steps of the problem approach. The problem approach, again, involves studying the symptoms, determining the causes, and, finally, finding solutions to the problem. The attempt to bring about a solution then becomes the goal.

How can our nation guide the social system to give more room for quality of life? To help young people understand the different meanings of quality of life, students may draw pictures about the dream to live a better life. Students may draw a picture of the man of the future. Is he deprived of such qualities of life as physical exercise, breathing fresh air, drinking fresh water?

## Planning for the Future and the Quality of Life

The class may be divided into five committees to discuss how each of the following affect the environment:

1. Population growth and movement.
2. Scientific development.
3. Technology.
4. Education.
5. Consumer's behavior.

Each committee member should specialize, in depth, in his committee's area. After the class has studied the areas, one by one, each committee should creatively summarize the fundamental ideas of each area.

## POPULATION GROWTH AND DISTRIBUTION

The nature of the population problem is different in a highly industrialized country like the United States than it is in an underdeveloped country like India. The people in the U. S. enjoy the highest standard of living, and the nutritional standards of the American people are among the highest in the world. The density of the population in the U. S. is much less than the density of the population in other industrialized countries. The density of the population in the U. S. is about 20 persons per kilometer, while in Germany, the United Kingdom, and some other European countries it is over 230 persons per kilometer. It is true that industry in the United States is a glutton for natural resources, but experts have recently said that the resource shortages that have been predicted are highly exaggerated. Also, it has been predicted that the rate of population growth will increase, causing a decrease in the standard of living in this country. But the statistical evidence and recent population projections for the future rule out this pessimistic outlook.

What then is the nature of the population problem in the United States? The report says that the nature of the population problem relates directly to industrialization. American industry did not grow haphazardly in this country; factories cannot be built everywhere. Factories are built where transportation is available for shipping and to bring together raw material, labor, and tools. These areas in the United States have been limited to the Northeast, the Great Lakes region, and the western and southern coast lines. This is where the big manufacturing plants have been erected. These are the areas attracting more of the population. These are the areas with the largest cities and where most conurbation has occurred.

The population problem created by economic growth in the United States is not an ever increasing number of people but the increasing concentration of population within small areas. (Figure 1)

Today, 12 metropolitan areas represent 10 percent of the total land area and contain 70 percent of the U. S. population. Large concentrations of people cause serious disequilibrium in the system, creating air pollution, water pollution, noise pollution, traffic jams, burdensome turnpikes, waste disposal problems, and depressed and desolate areas in other parts of the country. Where do all these people come from? Many come from the rural areas of the United States, farmers who have been deprived of their livelihood through mechanization, or small farmers unable to compete with the huge, modernized farming operations. According to the report, 500 counties, located mostly in the center of the country, are losing population. Over the past ten years the total populations of three rural states, North Dakota, South Dakota, and Wyoming, have actually declined.

A large number of rural immigrants move to the large metropolitan areas, completely unadapted to city life. They become the displaced persons of America. Such a social environment is a hotbed for all kinds of tensions--ethnic and racial prejudices, crime, poverty, and drug addiction. The problem is aggravated by urban sprawl, which swallows up the green areas so necessary for human survival. What can be done in the United States to assure an optimum size and distribution of the population?

## Immigration

Many people moving to American cities today are foreign immigrants. A country with as vast an area as the United States once lacked people to cultivate the land and to work in the factories. So, there was an Open Door Policy to encourage immigration. Steamship companies and other groups profiting from immigration saw to it that the advantages of coming to the U. S. were advertised. But then, in the 1880s, some groups began to feel that the new immigrants were not as good as the old immigrants. The political climate was such that the government felt something should be done to preserve the economic advantages of the country for the descendents of the early arrivals. In 1882 racial troubles flared between white workers and the Chinese immigrants who came here to help build the railroads. The government reacted by passing the Chinese Exclusion Act. In 1885, under the pressure of organized labor, the Alien Contract Labor Act was passed.

FIGURE 1

12 MAJOR URBAN REGIONS PROJECTED
BY YEAR 2000
HIGHLIGHTED AREAS REPRESENT:
218 Million People
71% of Mainland U.S. Population

This Act forbade the entrance of foreign workers under contract. The law intended to prevent employers from breaking strikes and undercutting wages by using cheap labor from foreign countries. Step by step, government policy shifted from stimulating immigrants to discouraging them. In 1921, the U. S. Government introduced a quota system.

Even with immigration limitations it is estimated that in 1975 more than 70 percent of the net inflow of migrants into metropolitan areas will be foreign immigrants. So, many people feel that immigration must be a key component of the future population policy.

## Birth Control

When this country was young and mostly rural, raising large families was encouraged. A large family on the farm was an asset; sons assured steady labor with little or no wage payments, and children insured old-age security for the pioneer community. With industrialization children of poor families became an increasing liability, as more and more people moved to cities and as more and more children were brought up in the slums and ghettos. A heated controversy started in America among those who promoted birth control and those who opposed it. As early as 1832 Charles Knowlton wrote a birth control pamphlet--"Fruits of Philosophy, or the Private Companion of Young Married People"--promoting the use of contraceptives and other methods of birth control. The book was confiscated as an offense against public morality and Knowlton was imprisoned.

In 1873, the Comstock Law was passed to suppress the circulation of obscene literature. Books or pamphlets on birth control were considered obscene. In 1916, Margaret Sanger advocated birth control clinics. Her idea was that birth control was an inalienable human right. The government was always cautious concerning birth control. There was little popular support for birth control.

In 1958, President Eisenhower said, "This government will not... as long as I am here have a positive political doctrine in its program that has to do with the problem of birth control. This is not our business."

Finally, in 1961 President Kennedy, in a special message, talked about the staggering problem of the population explosion in underdeveloped countries. Then, in 1966 President Johnson moved to open endorsement for federally funded birth control programs. He said, "We have a growing concern to foster the integrity of the family and the opportunity for each

child. It is essential that families have access to information and services that will allow freedom to choose the number and spacing of their children within the dictates of individual conscience."

In the first Presidential message to Congress on population, in 1969, President Nixon said, "Where will the next one hundred million Americans live? How will we house them? What of our natural resources and the quality of our environment? How can we assist American families to have no more children than they wish to have?"

In recent years the people of the U. S. have been increasingly accepting the idea that the individual should have freedom of choice concerning birth control. Today private organizations and the government encourage family planning programs, more effective information systems, liberalization of abortion laws, and changing individual and social attitudes through education and proper medical care.

Current political debates discuss the possibility of formulating government policies to discourage large families through tax laws, health insurance, and coercion. Some advocates of enforced sterilization say that having children should not be an inalienable right of the individual. There is an increasing movement today, started by young people, called Zero Population Growth. The purpose of this campaign is to reduce U. S. population growth to zero.

The drive to stop population growth encounters resistance from several quarters and for different reasons. Some oppose contraceptives and abortions on religious and moral grounds. Some militants see the whites' advocacy of birth control centers for the poor as an attempt to eradicate the Blacks and the poor populations, rather than meet their needs. And so the dialogue continues.

## Distribution of Population

In 1969 the National Governor's Conference resolved to petition the Congress to adopt a national policy of "enhancement and distribution of opportunity" in the country. The Conference asked the government to provide a public policy with incentives for a more even distribution of population, thereby alleviating the growing frustration occurring in over-populated areas and in areas losing population. The congestion problem of the American population can be largely related to looking at programs in isolation instead of looking at total systems. For example, farm

price supports favoring large farmers and driving out the small farmers, the awarding of defense contracts to large industrial establishments, and many other federal policies have contributed to the population concentration in urbanized areas.

The government has three choices leading to a more balanced distribution of population:

1. To keep population in the countryside and small towns, government policy should encourage the location of factories in these areas, support labor intensive rather than highly automated farming operations, and make government investments in sparsely populated areas.
2. Government policy should encourage the economic growth of middle-sized communities (those with a population of 25,000 to 50,000). These communities would be scattered throughout the U. S., attracting new industries and providing jobs for people from the surrounding rural areas who otherwise would migrate to large cities. Many part-time farmers could work in the factories or in businesses. The government would have to help these communities attract industries by building good transportation and communication networks, good schools, and pleasant environments.
3. Government policy should encourage the establishment of new communities. New communities, their supporters argue, would save money through efficient design and construction of facilities, would improve the quality of life by developing an adequate sense of community, and would maintain a style of life that would provide open space, beauty, and recreational opportunity. The only drawback in establishing new communities is that they could not be built fast enough to absorb the migrant population. Also, these new communities would attract many middle- and upper-income families from depressed areas, thus aggravating the economic and social problems of regions.

These recommended policies are not mutually exclusive. With the cooperation of individuals, organizations, and governments on local, state, and federal levels, a pattern of population policy could be developed, which would promote balanced economic growth.

## Classroom Ideas for Teachers

1. To help students understand the difference between the population problem of the United States and that of underdeveloped areas, the class may be divided into two groups. One group will prepare a display on the symptoms of the population problem in "underdeveloped areas" in terms of malnutrition, ill health, high infant mortality, and agricultural systems. The other group will prepare a display on the symptoms of the population problem in the U. S. in terms of unequal distribution of population; urbanization; air, water, and noise pollution; urban tensions; urban crime; and desolated or depressed areas.
2. To help students become aware of the multi-dimensional nature of the population problem in the U. S., a symposium may be organized to present the economist's view, the political scientist's view, the sociologist's view, the anthropologist's view, and the humanist's view of the problem.
3. To help students make use of statistical measurements, the class may collect data from the Historical Statistics of of the United States and from Environmental Quality: The First Annual Report of the Council on Environmental Quality.
4. To help the class discover the sensitivity of the community on immigration policy, migration policy, and birth control policy, the class may undertake an opinion research survey among their own families and friends to find out the extent to which the community supports or opposes certain programs and why. The class may act out some of these positions and present them to the class in the form of a debate, a panel discussion, or a political platform.
5. To help students relate the population problem to their own community and to see the population problem as it relates to the social system, students may investigate how population movements affect the city as a social system.
6. Teachers planning a unit or course on population issues, or teachers seeking media programs on population, should consult the April 1972 issue of Social Education, which

is devoted to "Population Education." It provides a comprehensive listing of materials and programs, including film reviews.

## ENVIRONMENT AND BALANCED ECONOMIC GROWTH

One of the most significant social concerns of recent years is people's concern for the environment. For the first time in history man's activities may be limited, not by scarcity of resources, food materials, energy, or wealth, but by the problem of disposing of man's affluence. The environment is made up of earth, water, air, all living things, and the interaction of man's work with the biosphere. Man's interaction may improve or worsen the biosphere. The outcome depends upon man's attitude toward nature and the stage of science and technology. Before the white man came to this continent, the biosphere was largely undisturbed, but changes in the biosphere occurred continually. Myriads of interactions take place at every moment of the day as plants and animals respond to variations in their surroundings and to each other. Evolution produces for each species, including man, a genetic composition that enables it to adjust to changes in its surroundings. It also establishes a limit as to how far the species can adjust to changes, especially to sudden changes. The first settlers on this continent, the Indians, respected nature and lived as a functional part of the biosphere as it existed. Besides, they had no scientific know-how or tools to make radical changes in their environment.

Then came the first white settlers. They cut the forests; they opened up mines; they plowed up the grasslands; they used the earth, water, and air as waste disposal; and the many species, including man, could not make the adjustment to these sudden changes. These sudden changes have taken the following forms: 1) Pollution materials accumulated where they were not wanted. The white man assumed that the land, water, and air around him would absorb his waste products. It is clear now that the white man exceeded nature's capacity to assimilate his wastes; 2) The white man misused the land. The unlimited access to the mountains and plains transformed our country into urban sprawls, into concrete roads and airstrips, and into business and industrial establishments, without any long-range planning or concern for the biosphere; 3) Science and technology demanded more and more energy and materials. Fulfilling those demands has changed our landscape. Since the first white settlement on this continent white men

have put the environment under greater and greater strain. The competitive system wants to produce goods as cheaply as possible; damage to the environment does not matter. The white settlers placed much greater priority on material well-being than on the beauty and wholesomeness of the environment. Their preference has been reinforced by their ability to produce greater and better machines, by their ability to move anywhere, and by an increasing population with increasing desire.

In 1864, George P. Marsh wrote a book entitled: Man and Nature or Physical Geography as Modified by Human Action. He wrote: "But, as we have seen, man has reacted upon organized and inorganic nature, and thereby modified, if not determined, the material structure of his earthly home. The measure of that reaction manifestly constitutes a very important element in the appreciation of the relations between mind and matter, as well as in the discussion of many purely physical problems." (Marsh 1864, p. 13)

In 1878, Major John Wesley Powell, explorer, surveyor, and later the first director of the U.S. Geological Survey, presented a Report on the Lands of the Arid Regions of the United States, in which he tried to discourage the U. S. Government from settling the Great Plains by small farmers. He warned the government that 40 percent of the United States is arid and that the annual rainfall in the arid regions is not enough to sustain an economy based on the traditional farm land patterns of the humid regions. Only a small part is irrigable, and cooperative labor and capital are necessary to develop irrigation. (See: The Colorado River Region and John Wesley Powell, 1969.)

In 1908, Theodore Roosevelt called together a conference of governors on the conservation of natural resources. The conference recognized the fact that the market economy is not prepared to conserve our resources. The need for public policy was recognized.

In 1930, the midwestern dust bowl demonstrated how nature responds to human incursions. The calamity received nationwide attention. Major Powell had been right fifty years before, when he said that the land laws were not suited to the lands of the arid regions.

In 1954, the bomb test at Bikini dropped radioactive fallout on Rongelap Atoll, thereby exposing the inhabitants, several U. S. servicemen, and some Japanese fishermen to significant levels of radioactivity. Fish in Japanese markets were discovered to contain fallout radioactivity. Radioactive dust fell into the ocean and the material was absorbed by small

plants; the plants were in turn eaten by small animals; these were eaten by large animals and eventually man was exposed to this radioactivity.

In 1962, Rachel Carson, in Silent Spring, described the impact of chemical pesticides on the natural environment. She explained how DDT, which is highly diffused in the water, is stored in large concentration in plants and animals and is harmful to their health and reproductive processes. Miss Carson's work on pesticides gave currency to what now has become a household word: ecology. Ecology teaches that substances released into the environment move in pathways or cycles and often return in highly concentrated form, perhaps to threaten man himself. These agents can affect many species of plants and animals. If a poison kills many of the animals which regulate the populations of certain other species, these other species may become new pests. At the same time the old pests may evolve new abilities to survive the poisons and then transmit them to other beings. Ecologists discovered that nature is a vast system in which everything relates to everything else. These and other ecological principles add up to a highly complex view of the world, which, in the past decade, the informed public has come to share with the ecologists.

How can society repair the past damages to the environment and prevent new damages? The U. S. Government and the state governments recently passed important legislation related to water pollution, air pollution, solid wastes, use of pesticides, and land use.

Private organizations and the Council on Environmental Quality are doing research and developing plans for an effective environmental control policy. The studies of these organizations and the Council cover the following areas:

1. The Council studies ways in which the government could impose regulations on polluters and enforce specific standards.
2. The Council studies tax incentive programs to stimulate the purchase of equipment with anti-pollution features.
3. The Council studies the possibilities of putting prices on pollution. The government would assess costs of pollution to farmers, manufacturers, and municipalities that cause pollution. These costs would then show up in the price of the product. The difficulty is the setting of a price on pollution.

4. The Council is sponsoring research on methods that would increase the capacity of the environment to absorb wastes and make the disposal of wastes much cheaper.
5. Some organizations feel that the best solution would be to lower the rate of economic growth. Such a proposal assumes that growth is the cause of environmental degradation. But degradation of the environment is not a necessary consequence of economic expansion. Also, a decrease of the rate of economic growth may lead to unemployment.
6. The U. S. Government, under the leadership of the U. S. Department of Health, Education, and Welfare, is searching for new ways to measure the well-being of man (see Toward a Social Report, 1969). People are increasingly aware that the conventional measurement of the Gross National Product shows only a very narrow aspect of human well-being. Since the quality of the environment, its improvement or deterioration, is not included in the GNP, it is possible that when the new measurements for well-being are developed they may lead to the necessity of lowering the GNP to maximize the quality of life. To pursue public policies with such objectives demands a profound change of value preferences of the American people.

## Classroom Ideas for Teachers

1. The Congressional hearings on the Environmental Quality Education Act of 1970 are a dramatic expression of the support for and opposition to improving the environment. Many witnesses with varied backgrounds appeared before Congressional committees. Their arguments reflected their business or value commitments. During the opening morning of the hearings on the Environmental Quality Education Act of 1970 on March 24, Dr. Lamont Cole, an ecologist, Dr. Joseph Sittler, a theologian, and Mr. Robert Motherwell, an artist, testified in support of the Environmental Quality Education Act. Each witness expressed his belief from his professional and philosophical point of view. Three students of the class may read these testimonies. After reading the testimonies

the three students may pretend that they are the three witnesses who present their arguments before the Congressional Committee made up of a group of students. Following the presentations the committee will interrogate the witnesses. The rest of the class will vote for or against the Environmental Quality Education Act.

2. If students want to do more elaborate work, they may ask three more witnesses to present their arguments to the committee. One witness pretends that he is John Lury, President of the Uniformed Sanitation Men's Association; another is Joe Moore, Vice-President of Eastmon Dillon Union, Securities Inc.; and the other is John T. Conway, of Consolidated Edison Company of New York City.

3. To help students understand that the environmental problem is an ongoing concern, the class may be divided into five committees. Each committee may study a contemporary environmental issue.

   Committee 1 may report on the Santa Barbara oil spill, Committee 2 on the jet airport project near Everglades National Park, Committee 3 on the proposed pipeline across the Alaska wilderness, Committee 4 on the blight of Lake Erie, and Committee 5 on an environmental issue in the community.

   Each report should cover the history of the case and the political or legal actions that communities or the government has taken on the issue. After each report the class will discuss the justification and effectiveness or ineffectiveness of the actions taken.

4. To help students develop political awareness of the complexity of enforcing the National Environmental Policy Act of 1969, the class may be divided into four committees. The committees may use a Congressional hearing on <u>The Administration of the National Environmental Policy Act</u> to carry out the following assignment:

   Committee 1 may read the testimony of the representatives of the Atomic Energy Commission, pp. 158-214. Committee 2 may read the testimony of the representatives of the

Federal Power Commission, pp. 215-470. Committee 3 may read the testimony of the representatives of the U. S. Department of Defense, pp. 884-963. Committee 4 may read the testimony of the representatives of the U. S. Department of Agriculture, pp. 963-1006.

Members of the classroom committees may dramatize some of the heated arguments between members of the Congressional committees and the witnesses, by using the readings as if they were plays.

## EDUCATION

Education and the economic growth of this country are closely related. Since the early days of our nation, our emphasis on universal education has enabled a large segment of our population to participate in building the country economically, politically, and culturally, and to reap the benefits of economic progress. In the 1969-70 school year sixty million people were enrolled in our schools, from kindergarten to post-graduate studies. The expenditure to assure education for these huge numbers reached $63 billion. In 1900 eleven percent of the youth between the ages of 14 and 17 were enrolled in high school. In 1969 94 percent of our youth between the ages of 14 and 17 were enrolled in high school.

Our educational system is unparalleled. It has grown in size and resources to the point where we have nearly universal education through the secondary schools. The reason for the success of our educational system has been its ability to adapt its structure and functions to the social changes which occurred in this country. Between 1800 and 1850, our nation demanded that our educational institutions teach the youth morality so as to promote social order and democratic principles. As the population shifted from rural areas to the cities, the purpose of education changed; urban and industrial society demanded order, punctuality, and reliability. Schools taught children that reward is given for individual ability and initiative. Children were taught to defer gratification and to exercise severe instinctual repression in order to promote both their own good and the good of the society.

Around 1900, schools became training centers for employment. Industrialization made it impossible for the homes, the shops, the neighborhood, and the church to continue their educative roles. Preparation for career and

life became too complicated. The schools assumed the major responsibility for meeting the nation's educational needs. The number of years spent in school became a measure of educational achievement. Two years of high school was considered necessary for white-collar employment

In the 1940s the nation was hit by a skill crisis. Economic development demanded increasingly specialized skills. Success became associated with an advanced degree of specialization.

After the Second World War, the American school system was put to a severe test. The cultural and technological change in our society had become so rapid that our educational system could not adapt itself. Because of their inability to adjust to these fast changes the school systems have been under heavy attack.

What are the consequences of this increasing gap between the fast-changing society and our educational system?

(a) Today the schools are no more the monopolists of information on facts and values. Students bring into the classroom, through the mass media, so much information at such a fast rate that the school system cannot cope with them.

(b) Today, youth are deprived of direct experience as a source of learning. Instead of learning skills on the job they are learning them in the schools. So youth today are passive bystanders in society for many more years than they were in the past. They feel that they are outside the main current of society.

(c) Society is changing so rapidly that skills and information that the schools teach become outmoded and traditional values are challenged. Many students feel that the culture in which students are trained may not be the one in which the new generation must live.

(d) Since the end of the Second World War, society and the educational system have been under the stress of social dislocations created by science and technology. The population has become increasingly concerned with war, poverty, racial discrimination, urban problems, alienation, and pollution. These changes in society have generated the fundamental question: How can schools adjust to these fast social changes and what should the emphasis be in education for the 1970s?

There are some people who say that the primary role of the schools, including universities, should be to search for truth and to

evaluate the culture of their time--that schools should search for knowledge for its own sake.

Other people believe that schools should be involved in society's problems. Schools should teach students the skills and knowledge they need to become better problem solvers in our society.

Still other people think that schools should help students to acquire the skill of independent learning for life.

A major source of young people's frustration is that schools do not prepare them for the real world, that schools have isolated them from "life" by increasing the number of years they spend in school and thereby extending the period of their dependence.

Young people feel that school should give them enough elbow room to discover for themselves and to enable them to feel that they are a part of society.

These are some of the general problems our educational system is facing. In addition to these general problems there are some specific ones.

One such specific problem is education of minorities. It was discovered that removing school segregation will not close the gap between the educational achievement of the minorities and that of the dominating white group. To remove actual segregation poses serious problems due to the segregated pattern of housing, the population distribution, and the transportation pattern, all of which hinder the integration of minorities with the dominant group.

Compensatory education has been recommended to close the educational achievement gap between the minorities and the dominant group. But some of the present proposals and practices are not very promising:

(1) Equalizing educational opportunities through the improvement of physical facilities and student-teacher ratio will not equalize achievements.

(2) Decentralization of the school system--giving increasing responsibilities to the local communities in determining the curriculum--did not bring the anticipated results.

(3) It is proposed that junior colleges should take over the responsibilities of raising the minority students' skills. This proposal, however, would turn junior

colleges into remedial institutions instead of their continuing as post-secondary education for those wo do not desire to finish four years of college.

(4) Some colleges have open admission for students belonging to minority groups. This policy creates racism in reverse, and can discriminate against white students.

The designers of compensatory programs must take into consideration that the life circumstances of the youngsters have a powerful influence on how much they learn. If the life circumstances of the students are not conducive to educational achievement, compensatory education alone will not solve the problem.

A second problem the educational institutions are facing is how to measure educational achievements. Schools today are increasingly judged by their output. Tools to measure educational output are difficult to construct. Great progress has been made in measuring skills, but measuring attitudinal and behavioral areas is complicated. The U. S. Government is urging special research to develop these measurements. It would be helpful if each region could assess special conditions of its population and formulate programs to move the educational achievement of the population toward an equivalent level with the rest of the country.

A third problem that our educational system faces is the high cost of education. Since most of the schools derive money from local property taxes, the amount spent per student varies greatly in different parts of the country.

Many proposals under consideration emphasize the need for the U. S. Government to share the financial burden with the local taxpayers. The educational system is the single crucial institution which can assure citizens a happy life, shape our system wisely, contribute to the economic growth of the nation, enable citizens to solve the problems created by economic growth, and assure a quality of life for which there is an increasing desire.

## Classroom Ideas for Teachers

The problem of education offers curriculum builders the opportunity to teach the following ideas:

1. To help students understand the changing objectives of education, a symposium may be organized. The members of the symposium will discuss the following propositions:

a) The purpose of education is to teach our youth good moral behavior.

b) The purpose of education is to teach our youth skills necessary for a growing economy.

c) The purpose of education is to make students aware of their life styles and coordinate these life styles with their future careers.

d) The purpose of education is to teach our youth about the universe and values for the sake of knowledge.

e) The purpose of education is to develop the problem-solving ability of our youth.

f) The purpose of education is to help students discover the ideas that underlie their experiences and help them discover a rationale underlying this seemingly chaotic world.

2. To help students discover the importance of compensatory education, the class may be divided into three committees. Committee 1 will investigate Project Headstart, Committee 2 will investigate compensatory education in language arts, and Committee 3 will investigate compensatory help rendered by guidance counsellors.

   Each committee should describe the scope of the project and what students' and teachers' reactions are to the success of the program.

3. Students may invite a panel made up of the following people: a high school dropout; a high school graduate in vocational education; a student attending junior college; a student attending a four-year college; and a student who is already on the job. Each should discuss how happy or unhappy he is with the choice of his career. Could he have made a better choice if he had known at the time he was in high school everything he knows now?

4. To help students understand the preoccupation of the President of the United States with future educational needs, a classroom committee may put on tape "Message from the President

of the United States on Educational Reform," March 3, 1970. One part of the committee may present the entire message on tape, while the rest of the committee forms a panel, giving reactions to the message.

## BASIC NATURAL SCIENCE

Knowledge about the physical and the social world is closely related to economic growth and to the quality of life of the American people. In the United States, the primary emphasis in scientific research was limited for a long time to inquiry into nature, with the idea that these discoveries would ultimately increase the physical well-being of the American people. The government played an important role in promoting scientific research. Just before and following World War II, funds supporting scientific research reached the highest level in American history. But since World War II, the allocation of funds for research has been challenged. Science has been subjected to inquiry about its role and its relevance in terms of its ability to solve contemporary problems. The validity of spending so much money on science has been challenged because:

1. Scientific research has been related to the production of deadly weapons and war.
2. Science has been related to the expansion of our productive capabilities with urban pollution as one result.
3. The application of science has been related to the destruction of our environment.
4. Much scientific knowledge has been related to the satisfaction of scientists' curiosity instead of human progress.

For laymen to figure out the ultimate payoff of scientific research is a difficult task. The history of scientific research has shown that even the most theoretical research work has potential for generating knowledge that can lead ultimately to some practical application; therefore, it is misleading to think of research that is oriented primarily to scientific knowledge as being in contrast with science that is undertaken for the sake of its potentially useful applications.

Scientific research can lead not only to economic growth but also to solutions for problems that have been created by economic growth. Human, animal, and plant biology can contribute to the breeding of better animals and the growing of better plants, as well as to expanding knowledge pertinent

to our environmental problems. Basic knowledge that might give us new synthetic fertilizers, detergents, and other materials also can help us solve our pollution problems. New knowledge in neurophysiology contributes not only to curing disease but also to a better understanding of the learning process and to improvement of education. Better knowledge of the physics of the solar system, besides satisfying curiosity, can be relevant to long-range weather forecasting. The question of how much money should be allocated to pure research and how much to applied research is not valid, since even the purest research has potentially significant, practical applications.

Experience also shows that science seems to contribute most to human understanding of the universe and to society when scientists are governed not by governmental edict but by their own decisions. This means that projects are selected on the basis of their potential payoff in terms of man's general knowledge. The knowledge that is acquired may or may not have the promise of immediate practical applications, but it is difficult to predict which seemingly idle scientific curiosity will lead to a discovery relevant to human progress.

## The Historical Evolution of Scientific Research

The promotion of scientific research began with the birth of our nation. Article I, Section VIII of the Constitution empowers the Congress to promote the progress of science and the useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries. This Article of the Constitution emphasizes the usefulness of science and inventions, a commitment which reflects the pragmatic philosophy, an important component of the American culture.

This pragmatic philosophy has guided our public policies during the two hundred years of our history. Thomas Jefferson supported Lewis and Clark's expedition to the Northwest Territory, and established a survey of the coastal waters of the eastern seaboard. In 1846 the Smithsonian Institute was chartered for the purpose of increasing and diffusing knowledge among men. During the Civil War, Congress passed the Morrill Act, which enabled the Federal Government to grant public lands for the establishment of educational institutions. In most of these land-grant colleges, the emphasis was to be on the improvement of agricultural research and technology. At about the same time, the National Academy of Sciences was established.

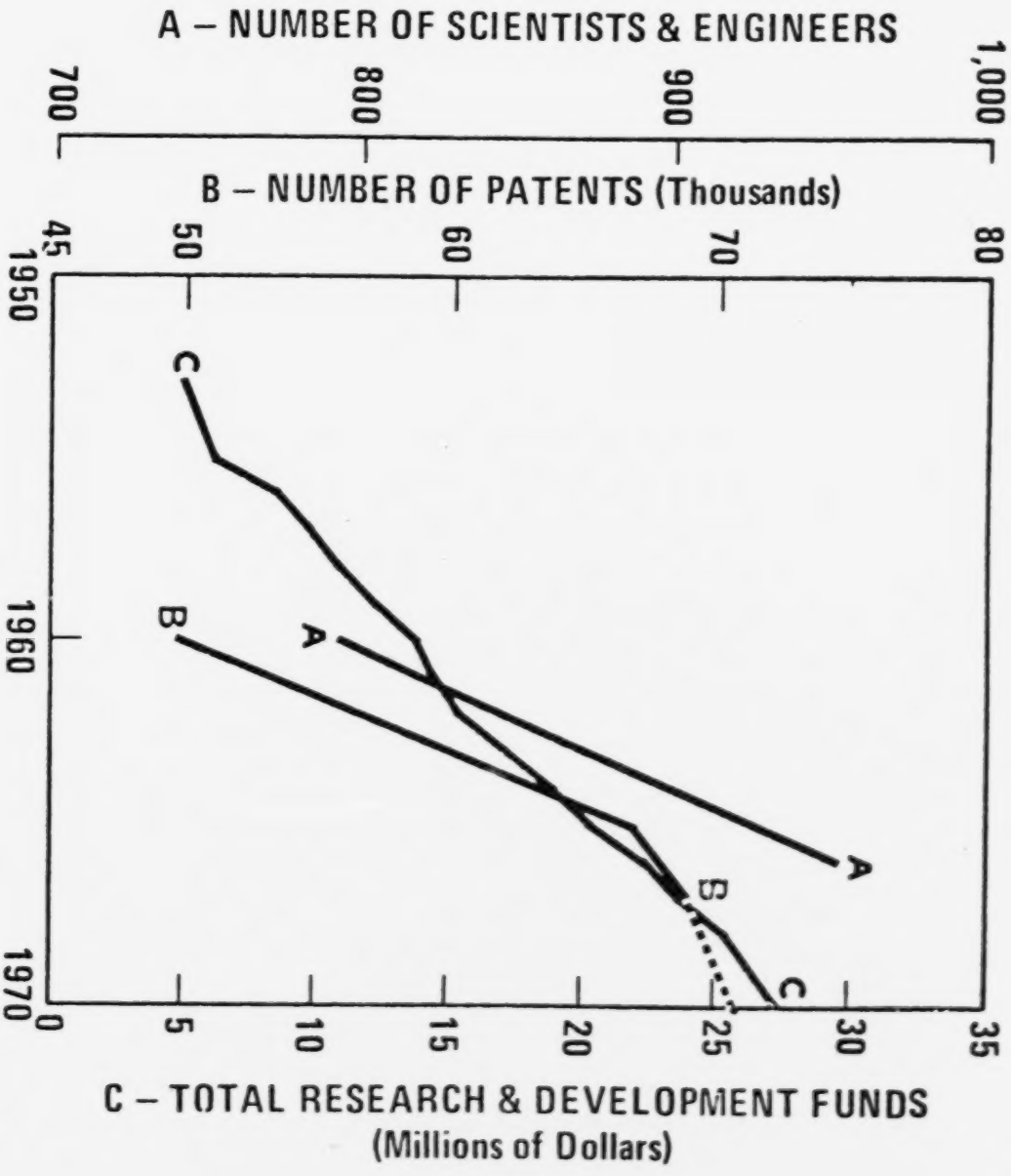
At the beginning of World War I, many scientific agencies were established to promote defense-oriented scientific research. Between 1920 and 1930, scientific research turned its attention to the support of industrial development. In 1930, the National Resources Planning Board was established by the government. It emphasized science as an integral part of national resource development.

In the 1940s scientific research again served the defense needs of the country. During World War II, the development of atomic energy and the invention of jet propulsion were two of the most important areas in which thousands of scientists and technicians were enlisted. Large public funds were channeled to hundreds of projects, establishing an important relationship between science and government. Then, in 1957, the launching of Sputnik by the Soviet Union gave added stimulus to public support of scientific research.

When a public policy promoting scientific research is utility-oriented, it is very unstable. The nature of the scientific research and the amount which is spent on such research depends upon the priorities society attaches to the project. In the 1960s, government decided to cut the rate of funding for many of the projects. Society started to challenge the promotion of scientific research as a top national goal. This suspicion toward the public policy of high priority to scientific research had many reasons:

1. Opposition to the Vietnam War had led to criticism of the scientific research which contributed to military technology.
2. Increasing concern for the environment had created an opposition to unregulated technological advancement. Technological advancement was related to business and business to basic research.
3. Knowledge had been related to power and power to danger and irresponsibility. Laymen have nightmares about the possible consequences of the irresponsible use of nuclear power or the irresponsible manipulation of genes. A split had developed in the country between those who felt that scientific development may lead to catastrophe and those who believed that scientific advancement by itself is not dangerous.
4. Increasing knowledge had been related to the rate of change. From World War II to the late 1960s, science and technology underwent rapid and sustained growth. Figure 2 shows this

FIGURE 2




Source: Statistical Abstract of the U.S. 1969.

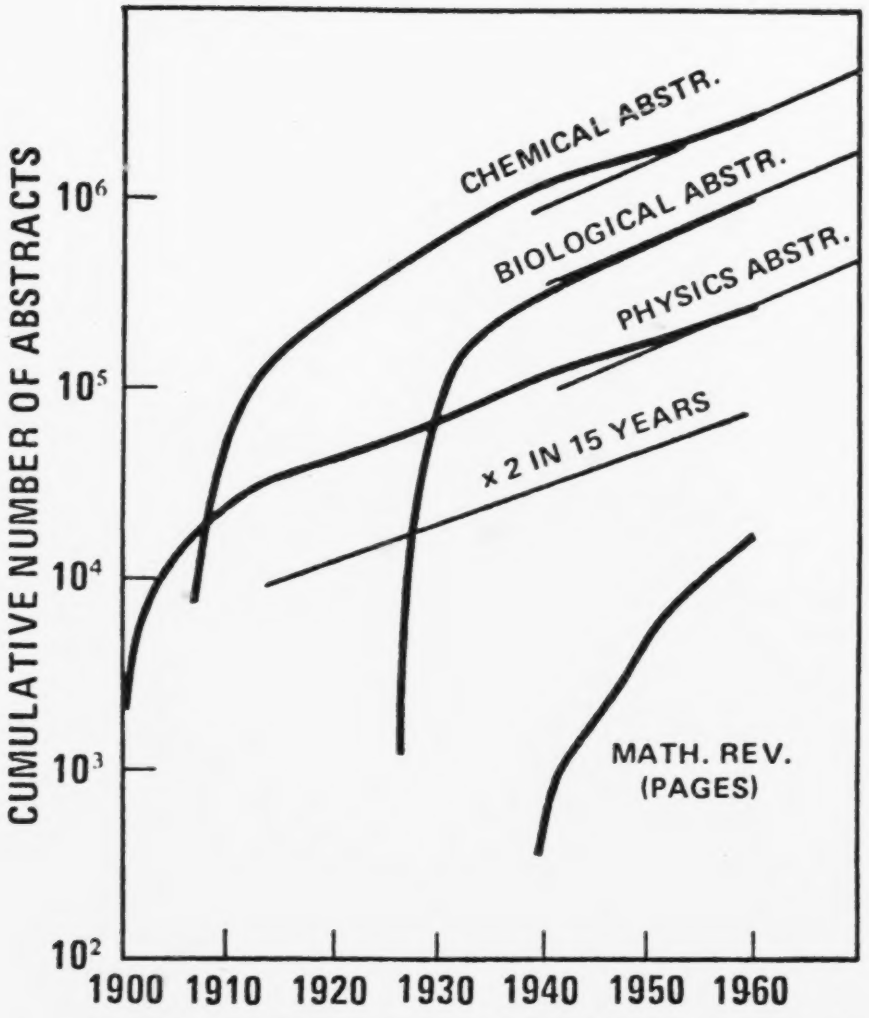
growing knowledge as indicated by the number of scientists and engineers (A), the number of patents granted (B), and the money spent on research and development (C). Figure 3 shows this through the number of scientific documents published. Many leaders of our society express concern about man's inability to absorb all these changes into the human and social system. Technological development found faster and faster social application in our country. (Figure 4) Alvin Toffler describes the disorientation experienced by people undergoing rapid technical and social change. (Toffler 1970) Lewis Mumford and others propose a moratorium on science so that the human race may have an opportunity to recover and reassess. (Mumford 1963)

5. Millions of concerned citizens, largely youth, attack scientists for contributing to the wrong missions and for developing knowledge that may be put to socially harmful purposes. Youth is blaming science and technology for dehumanizing and depersonalizing our culture. Thoughtful young people say that the very norms which promote objectivity and detachment in science, and the effective control of nature through technical means, impoverish the human spirit and stifle the spontaneity and creativity of people. For all these reasons, science is losing the support of society. The big problem is: Can the American people find a way to support the contribution of science toward national goals with the full awareness that such scientific enterprises may lead to the erosion of our culture?

The future of basic science in America depends on whether or not the American people can be persuaded to renew their confidence in the value of science for the social welfare and the security of the nation. It also depends upon the extent to which bright young Americans can be persuaded that the pursuit of science is in accord with their values.

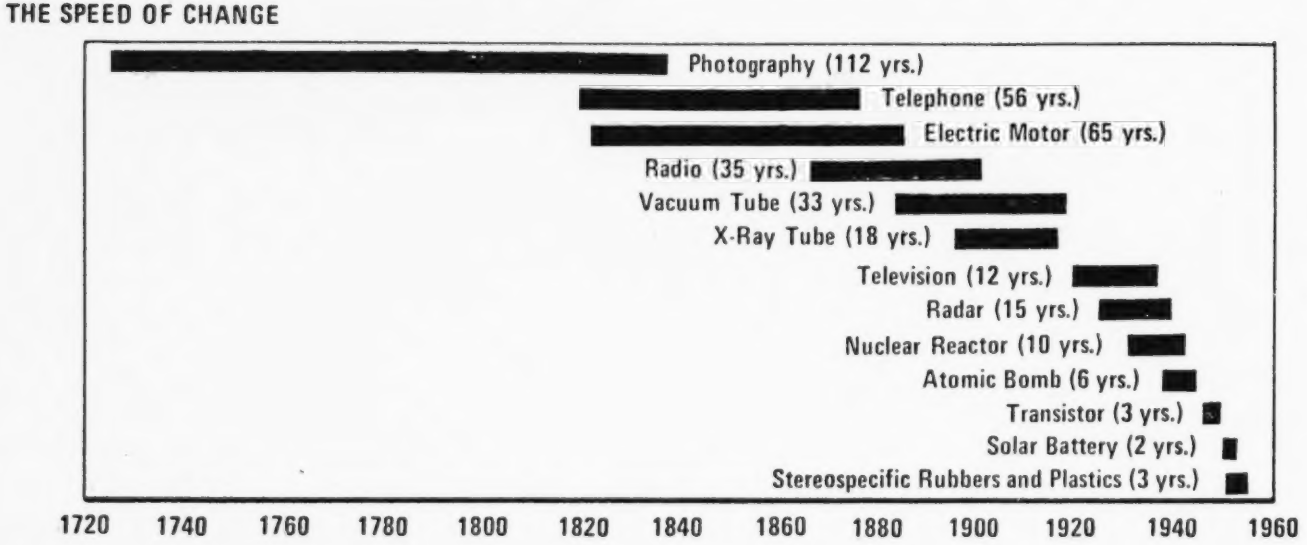
There are two arguments for the support of basic sciences by the government. The first argument is that science is part of culture and therefore a necessary component of advanced civilization. This view links science with the human urge to comprehend and come to terms with the universe, to which bright young Americans can be persuaded that the pursuit of science is in accordance with their values.

FIGURE 3




CUMULATIVE NUMBER OF ABSTRACTS IN VARIOUS SCIENTIFIC FIELDS, FROM THE BEGINNING OF THE ABSTRACT SERVICE TO GIVEN DATE

## SELECTIVE ILLUSTRATIONS OF THE SPEED FOR INTRODUCING TECHNICAL DEVELOPMENT INTO SOCIAL USE




Source: "World Facts and Trends"; Center for Integrative Studies; School of Advanced Technology; State University of New York; Binghamton, N.Y., 1969

FIGURE 4

It is supported by youth but is not persuasive with the general public.

The second argument is that science is an important component of economic growth. This argument views scientific education primarily as the acquisition of skills and the training of experts for the benefit of society. It is very persuasive for many Americans, since it conforms with our pragmatic philosophy. The big problem, however, is how to make the public, primarily the young people, recognize the relationship between basic scientific research and the good life. One of the greatest concerns of our government will be the development of a national science policy that assures a balance between the different areas of science and that will have the intelligent support of society.

To assure the first objective, scientific research projects must be carefully evaluated not only by scientists who are directly involved in the projects but by the scientific community at large. Any scientific project, before its funding, should be carefully studied by members of the National Academy of Sciences and by the American Association for the Advancement of Science, or by other informal forums of the scientific community.

To assure the second objective, it is very important to improve the channels of communication between scientific organizations and the lay public so that the nonscientific members of the society will be able to comprehend the short-run and long-run consequences of scientific research. In this way, every American can participate intelligently in the formulation of a national science policy, a prerequisite for balanced economic growth.

## Classroom Ideas for Teachers

Basic natural science offers to curriculum builders the opportunity to teach the following ideas:

1. To help students understand the relation between scientific progress and society, the class may study the following problem: Can the American people find a way to support scientific advancement with the full awareness that such scientific progress may lead to the erosion of our culture?

Several questions might be considered in relation to this problem. How does scientific knowledge conflict with religious beliefs? What is the

relation between technology and job obsolescence? How does scientific knowledge affect our competitive system? How does increased emphasis on scientific knowledge affect political participation, the family, ethics, and religious beliefs? Is the solution to the problem: To stop the support of science? To support science but eliminate certain programs harmful to national goals? To identify the national goals and reorganize the research support program in line with these goals?

2. To help students understand the historical evolution of national science policy, students may be divided into committees, each studying another episode of our history related to the support of sciences, including: the Constitutional Convention and its role in emphasizing the support of science; the founding of the Smithsonian Institute; the significance of the Morrill Act; the committees organized between 1914 and 1920 to support science; the role of the National Resources Planning Board in the support of science; the government's role in the development of atomic energy and jet propulsion during World War II; the impact of Sputnik on public support of science; current public attitude toward the support of science.
3. To help students understand the potentialities of basic science, the class should study the annual report of the National Science Foundation to gain some impression of the many different areas the government is supporting in the arena of pure science. With the help of the science teacher, the class may explain some of the supportive research areas and the possible practical applications for society.

## TECHNOLOGY ASSESSMENT

The rapid advancement of technology in the United States has long been considered the sole measurement of well-being. It was assumed that improved technology brings broader choices for the American people. It was assumed that widening choices of the American people means improving welfare. The unqualified assumption that increasing technology means a better life was recently challenged.

Society indeed depends upon technology. An urban society cannot live without it. Living in cities requires efficient transportation and

communication systems. It requires adequate housing systems. Living in cities demands improved medical and health facilities. Underlying these improvements is technology. In the past the application of science and technology had a narrow guideline: the size of the profit. It was assumed that high profit reflected consumer preferences. The higher the profit the more the consumer wanted the commodity. Private welfare was identified with the public welfare.

This narrow attitude toward the use of technology changed. An awareness developed that increasing technology may have an unfavorable impact upon the environment. Technology not only offers more convenience but can also unfavorably affect the quality of life. Technology can pollute air and water. Technology also causes people to move to the cities with resulting crowded living conditions. The crowding may create tensions between individuals and groups with resulting unhappiness and violence. So, people begin to judge critically the social impact of technology and to hope that the undesirable effects of technology can be minimized or even eliminated.

Society's increasing awareness of the undesirable effects of technology is reflected in the contrast between two laws, both of which recognize the need for economic growth. The Employment Act of 1946 states: "It is the responsibility of the federal government to use all practical means...to promote maximizing employment production and purchasing power." Twenty-three years later, the National Environmental Policy Act of 1969 recognized the importance of industrial expansion, resource exploitation, and expanding technological advances, but it also recognized the importance of restoring and maintaining environmental quality for the overall welfare and development of man.

On the basis of these two contrasting policy declarations, the Congress has taken the position that our society wishes not only to continue to expand its productive capacity but also to apply our technical prowess in harmony with social and environmental quality goals, that is, to pursue a policy of balanced growth. This concentrated effort must be directed to anticipate those institutional changes that may be brought about by changing technology and to evaluate their favorable and unfavorable consequences.

The anticipation of social problems due to changing technology becomes increasingly urgent for the following reasons:

1. Technology is becoming more complicated.
2. The increasing complexity of new technology makes it increasingly difficult to predict the scope of institutional changes.
3. The increasing understanding of the biological, ecological, and social world increases our awareness of the dramatic consequences of the expanding technology.

The urgent need to assess the impact of technology upon society was recognized for a long time, but the attention was directed to isolated cases. Mining disasters and boiler explosions, for instance, created a demand for public policies to prevent such accidents.

In June 1937 a report was presented to President Franklin Roosevelt which urged a national policy of social planning that would enable the government to size up the possible dislocations caused by future technology and to do something about the problems created by the dislocations. The report said: "The important general conclusion to be drawn from these studies is the continuing growth of the already high and rapidly developing technology in the social structure of the nation, and hence the hazard of any planning that does not take this fact into consideration."

In early 1963 the U. S. Congress established a special committee to investigate the numerous government-sponsored research programs. The committee report concluded that the most significant weakness of the government's research and development program was its inability to consider the aggregate impact of the programs upon national life. As an outgrowth of this report, the various government agencies became increasingly aware of the need to relate their particular work in science and technology to the social system at large. The Atomic Energy Commission, the Food and Drug Commission, the National Aeronautics and Space Administration, and other agencies try to relate their particular missions to the present and future life of the nation. Important publications emerge from these efforts. The U. S. Department of Health, Education, and Welfare issued an important report on social indicators. In this volume, a group of social scientists collected a set of varied statistical measurements as potential tools to measure social welfare.

In October 1966 the Science and Astronautics Committee of the House of Representatives published a trail-blazing report. The committee called for establishment of a Technology Assessment Board for "keeping tabs on the potential dangers, as well as the benefits inherent in new technology and

simultaneously informing the public of the nature of them." This committee attempted to establish a procedure which would enable the government to assess the economic, political, sociological, and cultural impact of technological projects. This assessment will help the members of the U. S. Congress and the American people to weigh the favorable and unfavorable effects of a project and to enable them to make intelligent political decisions for the support or opposition of the project. The Chairman of the Science, Research, and Development Subcommittee of the House Science and Astronautics Committee said on July 3, 1967 "...our goal is a legislative capability for policy determination in applied science and technology which will be anticipatory and adaptive rather than reactionary and symptomatic." Today, technological assessment becomes increasingly a new part of private and public practice. Some industries are spending increasing amounts not only on product development but also on studying the effects a new product may have on the health of the people and the physical environment.

Technological assessment also becomes increasingly a part of the thinking of the American people. Public reaction to the SST boom, some drugs, and to DDT had a considerable impact upon public policies. Urban planners took into serious consideration the public's negative reactions to urban renewal, the construction of highways, and the construction of industrial plants which to the public's eyes represented threats to the environment. A major governmental action that incorporated technological assessment in public policy was reflected in the National Environmental Policy Act of 1969. The Act declared that every governmental project that has the possibility of affecting environment must be carefully studied before it is approved. The purpose of this law is to ensure a more rational basis for introducing new technology and evaluating existing technology.

Technological assessment as a guide to public policy must be applied carefully since it may have unfavorable consequences:

1. If technological assessment is applied very rigorously, public policy may retard economic growth.
2. Public policy may stop the marketing of products of which the social benefits far outweigh the possible social costs.
3. Due to the lack of social measurements, emotionalism may guide public policies and the assessment system may be guided in an unplanned, uncoordinated fashion.

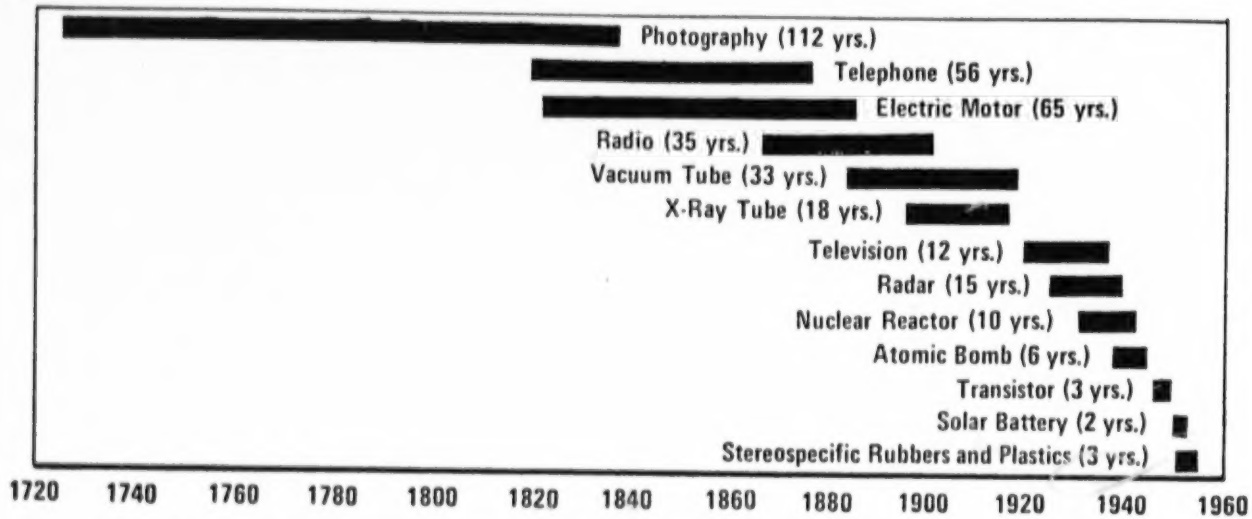
Our nation is far away from the establishment of a scientifically rigorous technological assessment. We just do not have the scientific know-how to measure and predict the good and bad effects of technology. But the present policies, as they have been formulated by private and public sectors, attempt to relate technology to the rest of the social system. The first giant step has been made in the right direction.

## Classroom Ideas for Teachers

1. To make students aware of how difficult it is to make a choice between economic growth and the preservation of the environment, students should pretend that they are members of an executive branch of the government empowered to control the quality of the environment. The issue before them is to decide whether they should give permission to public utility companies to build power-generating plants in the coal-abundant areas of northwestern New Mexico. The power plants would use the coal mined in this region. The plants would sell electricity in the Four Corners states and in California. The class should weigh the good and bad effects of such a program and make a decision on the economic and social development of the region.
2. The teacher should make a transparency on "The Speed for Introducing Technological Development into Social Use." (Figure 5) With the transparency projected on the screen, the class may discuss the following questions:
    (a) What is the historical trend of incorporating technological development into our economy?
    (b) What could be the reasons for the increasing speed of making "practical" use of technology?
    (c) How does this increasing speed of using scientific development affect economic growth?
3. To make students aware of the increasing concern of society for the quality of life, the class should be assigned to report regularly on environmental issues reported through the mass media. The student may elaborate on the economic, political, cultural, and legal aspects of the environmental issue.

## SELECTIVE ILLUSTRATIONS OF THE SPEED FOR INTRODUCING TECHNICAL DEVELOPMENT INTO SOCIAL USE

THE SPEED OF CHANGE




Source: "World Facts and Trends"; Center for Integrative Studies; School of Advanced Technology; State University of New York; Binghamton, N.Y., 1969

FIGURE 5

## CONSUMERISM

One of the most important outcomes of economic growth is the widening choice for the consumer of durable and nondurable goods and services. With the increasing choices for the consumer a social problem has been created. The consumer is more and more bewildered because he feels less and less capable of making intelligent choices among the increasing multitudes of goods and services. Our economic system prides itself on the sovereignity of the consumer. It is assumed that the consumer is free to make choices and make them intelligently; however, as our economy has grown, the government has become aware that the consumer has to be protected, because the marketing skill and the power of American businesses leave the consumer helpless in making wise choices.

As early as 1870, legislation tried to protect the consumer against dishonest businessmen. But the courts took a strict "hands off" policy toward private contracts no matter how unfair or oppressive they were. The basic postulate of the court was, "Let the buyer beware." This attitude started to change with the Sherman Anti-Trust Act of 1890, and then the Clayton Act in 1914. Both Acts declared it illegal for business to coerce the general public. The Food and Drug Act of 1906, the Federal Trade Commission Act of 1914, and the Federal Power Commission Act of 1920 came about because trade unions, journalists, and the executive branch of the government demanded that Congress act against businesses that wanted to cheat or misguide consumers by selling them dangerous products especially through false and misleading practices. Between 1910 and 1920, journalists and novelists attacked business for unscrupulous practices which brought the plight of the consumer to the foreground. The protests of the writers talked not only about the misguided members of the middle and upper classes but also talked about the millions of poor people who were exploited by stores and landlords. In the 1920s, in addition to more demand for consumer protection, consumer education was emphasized. Books were written on how to use income wisely. People were eager to examine critically the issues of product differentiation, unwise spending, and misleading advertising. The court changed its attitude also. Now the courts ruled against powerful industries. The stand changed from "Let the buyer beware" to the principle of "Let the seller beware."

In the National Recovery Act of 1933 the interest of the consumer was

recognized for the first time. In 1935, consumers formed consumers' unions which fought for recognition of common consumers' interests throughout the years of World War II. This new demand for recognizing the consumers' interest as a social problem gave a new dimension to consumerism. (Consumer interest now demanded not sporadic legislation but a recognition that the consumer is just as much a part of the social system as any other segment of society.)

On March 15, 1962, President John F. Kennedy sent to Congress a special message concerning protection of consumers' interests. His central thesis was that "consumers are the only important group in the economy who are not effectively organized, whose views are often not heard." Special councils have been formed to protect the consumers' interests. Special assistants to the President for consumer affairs have appeared in recent years. Educational programs have been promoted for all grades in the public schools. The special assistant to the President for consumer affairs has been authorized to deal directly with consumers' complaints.

On October 30, 1969, President Nixon offered a buyers' bill of rights: "I believe that the buyer in America today has the right to make an intelligent choice among products and services. The buyer has the right to accurate information on which to make his free choice. The buyer has the right to expect that his health and safety are taken into account by those who seek his patronage. The buyer has the right to register his dissatisfaction and have his complaint heard and weighed, when his interests are badly served."

What were the reasons for the development of these new policy trends? In the late 19th and 20th centuries the problem was scarcity. Choices among consumer goods were limited. Most of the goods and services were produced to satisfy the basic needs for food, clothing, and shelter. The goods were simply produced and because of the limited production, consumers could make rational decisions. Consumer protection is limited to action against monopolistic practices, against dangerous products, and against false and misleading business practices.

Technology grew and with it the size of business and the capacity to produce a broad range of goods in large amounts. One would assume that with increasing choices, the consumer would be happier. But this was not the case. Consumers demanded protection against the flood of new products. Consumers argue today that the expanding economy has narrowed consumer sovereignty. Here are some consumers' arguments:

1. Many goods are so technically complex that consumers cannot judge the quality.
2. These technically complex goods cannot be repaired, and the consumers are compelled to buy new goods instead of repairing the old ones.
3. Many of the new goods, produced from chemicals or by the use of chemicals, are hazards to health.
4. Many goods today do not satisfy basic needs; rather they appeal to the satisfaction of psychological needs generated by advertising.
5. Many of the consumer goods which are sold as distinctly different are relatively undifferentiated items, and consumers are induced to buy these merely to increase sales.
6. The economy is dominated by a few hundred giant corporations which shape the future of the entire society and are not responsive to the needs of the consumer.
7. Many products are packaged and sold without any attention to the personal need of the individual.
8. Business, through advertising and changing style and fashion, has escalated the obsolescence of goods.
9. Because of increasing complexity and greater variety of goods, consumers' ability to evaluate purchased goods is almost impossible.

The question is, then: What can be done to enable consumers to take full advantage of economic growth by enabling them to make rational choices? The solution rests with individuals, businesses, and government:

1. Consumers must receive more and better education so that they can make better choices. Consumers must build effective organizations to represent their interests through information, education, and legal procedures.
2. Business must develop codes that acknowledge business responsibility to protect the health and safety of consumers, improve quality standards, simplify warranties, improve repair and servicing quality, self-police fraud and deception, improve information, provide it to the consumers, make sound value comparisons, and provide effective channels for consumer complaints.

3. Government must establish and expand the power of the Office of Consumer Affairs, which will set standards for business. At the same time, the government must exercise its responsibility to the consumer in a way that will preserve a favorable business environment. If an undesirable practice is prohibited, everyone must obey. Otherwise the fair and honest business practices will be penalized and dishonest practices rewarded. Just as nations cooperate to set basic standards of time, temperature, mass, and length, so can the nation and nations together establish standards for scientific, industrial, and commercial activities. The establishment of such standards may result in fewer choices for the consumer in terms of conventional goods, but a proper public policy may be able to offset these losses with a higher quality of life.

Classroom Ideas for Teachers

1. To increase students' awareness of the role of the consumer in the American economy, students might study the table on Gross National Product, 1969-75. (Figure 6) The class will discuss the following questions:
   (a) Is it important that consumers buy more and more to increase the GNP to satisfy their increasing private needs?
   (b) What are the new frontiers of private needs? (Raise income of poverty-stricken families or stimulate new needs of those who already have "everything.")
   (c) What are the new frontiers of public needs?
   (d) Studying the chart, do you conclude that we have all the resources we need to satisfy private or public needs, or do we have to ration our resources in such a way as to assure maximum satisfaction?

*Gross national product, 1969 and projections for 1970–75*

[Billions of dollars, 1969 prices; calendar years]

| Claim | 1969 actual | Projections | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 |
| Gross national product available | 932.3 | 944 | 980 | 1,042 | 1,103 | 1,150 | 1,200 |
| Claims on available GNP | 932.3 | 944 | 980 | 1,042 | 1,100 | 1,144 | 1,188 |
| Federal Government purchases | 102.0 | 93 | 89 | 88 | 87 | 87 | 86 |
| State and local government purchases | 112.7 | 116 | 120 | 125 | 131 | 137 | 142 |
| Personal consumption expenditures | 576.0 | 594 | 620 | 664 | 704 | 735 | 769 |
| Gross private investment | 141.7 | 141 | 152 | 166 | 178 | 186 | 192 |
| Business fixed investment | 99.3 | 103 | 105 | 111 | 116 | 120 | 125 |
| Residential structures | 32.2 | 29 | 34 | 40 | 46 | 49 | 49 |
| Other investment | 10.1 | 10 | 14 | 15 | 16 | 17 | 18 |
| Excess of claims | 0 | 0 | 0 | 0 | −3 | −6 | −12 |

NOTE.—Projections are based on projected Federal expenditures and their influence on various components of GNP.

Detail will not necessarily add to totals because of rounding.

Source: Council of Economic Advisers, Economic Report of the President, February 1970, p. 79.

FIGURE 6

2. To help students understand the history of consumer protection, the class might read carefully the chapter on consumerism in the Presidential report.
3. To help students understand the present important movements in consumerism, the class will be divided into two groups. The first group will study the history of the Consumer Union and the publications of the union. They will discuss how the efforts of this organization contribute to the protection of the consumer. The second group will investigate Mr. Ralph Nader's work and the objectives of his organization. They may write to The Center for Study of Responsive Law, Washington, D.C. for testimonies Ralph Nader and his staff have given before the various Congressional committees concerned with the consumer.
4. To help students understand the changing trend of the manufacturers' attitude toward the market and customers, two quotations may be presented.
    (a) Henry Ford said in 1922, "We cannot conceive how to serve the consumer unless we make for him something that, as far as we can provide, will last forever. It does not please us to have a buyer's car wear out or become obsolete. We want the man who buys one of our products never to have to buy another. We never make an improvement that renders any previous model obsolete. The parts of a specific model are not only interchangeable with similar parts on all other cars of that model, but they are interchangeable with similar parts on all the cars that we have turned out."
    (b) Alfred P. Sloan, Jr., Chairman of the Board of Directors of General Motors, said in 1932, "We cannot reasonably expect to continue to make the same things over and over. The simplest way to assure safe production is to keep changing the product--the market for new things is indefinitely elastic. One of the fundamental purposes of

research is to foster a healthy dissatisfaction. The 'laws' of the Paris dress makers have come to be a factor in the automobile industry and woe to the company which ignores them."

## ECONOMIC CHOICE AND BALANCED GROWTH

We have talked about issues and problems that affect economic growth. We have discovered that every specific area is related to the entire social system.

The desire for a more even distribution of the population will demand different policies for transportation and housing. The promotion of a new consumer awareness will require a reallocation of many resources, which today make little or no contribution to social welfare. The promotion of the areas discussed by the Presidents' Reports will have a broad impact upon the choices of the individual, upon the choices of groups, and upon the quality of life.

Quality of life is a new goal of our society. People in the United States are becoming increasingly aware that possessing more does not necessarily mean a happier life, that wealth does not necessarily bring a good life. Mr. Nixon said that never has a nation seemed to have had more and enjoyed it less. That does not mean that the people of the United States would become happier if we would cut the rate of economic growth. Private and public sectors have increasing claims on the Gross National Product. The GNP has to be increased fast to keep up with these increasing claims. (Figure 7)

Economic growth is necessary to raise the standard of living, to provide goods and services, to provide a way to reduce the incidence of poverty, and to raise the income of the minority groups. Besides this, economic growth is necessary to widen the scope of individual choices in terms of amenities, so that people can enjoy art and so that society will be able to undertake more humanitarian programs. The problem now is: How can we continue to have a growing economy and at the same time have a healthy and beautiful environment?

There is a large segment of the American people who have been deprived of a healthy environment because they are poor. So, resources have to be directed to eliminate poverty and improve the living conditions of the poor. Poverty has been accepted in our country as a societal concern.

FIGURE 7

*Gross national product, 1969 and projections for 1970–75*

[Billions of dollars, 1969 prices; calendar years]

| Claim | 1969 actual | Projections | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 |
| Gross national product available | 932.3 | 944 | 980 | 1,042 | 1,103 | 1,150 | 1,200 |
| Claims on available GNP | 932.3 | 944 | 980 | 1,042 | 1,100 | 1,144 | 1,188 |
| Federal Government purchases | 102.0 | 93 | 89 | 88 | 87 | 87 | 86 |
| State and local government purchases | 112.7 | 116 | 120 | 125 | 131 | 137 | 142 |
| Personal consumption expenditures | 576.0 | 594 | 620 | 664 | 704 | 735 | 769 |
| Gross private investment | 141.7 | 141 | 152 | 166 | 178 | 186 | 192 |
| Business fixed investment | 99.3 | 103 | 105 | 111 | 116 | 120 | 125 |
| Residential structures | 32.2 | 29 | 34 | 40 | 46 | 49 | 49 |
| Other investment | 10.1 | 10 | 14 | 15 | 16 | 17 | 18 |
| Excess of claims | 0 | 0 | 0 | 0 | −3 | −6 | −12 |

NOTE.—Projections are based on projected Federal expenditures and their influence on various components of GNP.

Detail will not necessarily add to totals because of rounding.

Source: Council of Economic Advisers, Economic Report of the President, February 1970, p. 79.

Poverty hurts the individual since it brings with it poor education, poor health, little opportunity for advancement, and discriminatory treatment by the rest of the society. Poverty is bad for the nation. The talents of unemployed and underemployed are not fully utilized, so the country is poorer as a result of the goods and services not produced. Taking care of the poor means costs to the society. Also, poverty may lead to the alienation of the poor from the rest of society, and to political polarization.

Who are the poor? There are two ways to measure poverty. The first way is to define a poverty line. Everyone who falls below this line is considered poor. Using this criterion, every urban family of four is considered poor whose income is $3,600 per year or less. The other way to measure poverty is to measure people's share of the national income. According to this criterion, the 20 percent of America's households with the lowest income are considered poor. Since World War II, the share of the national income for the lowest 20 percent remained about the same. But if poverty is measured by the poverty line of $3,600, the number of families in poverty has declined substantially. According to this second criterion, $10 billion would be needed to bring the country's poor families above the poverty line.

Various remedies are offered to solve the problem of poverty. One remedy is the assurance of a fully employed economy and high productivity. Other recommended remedies are guaranteed income for every American family and guaranteed employment in the private and public sectors. If private business cannot absorb all those who are looking for jobs, the government should become the employer of last resort. In the long run, poverty can be eliminated only through better education, and through providing better living conditions that would assure the poor family proper physical and mental health.

One important way to improve the physical and mental health of families is the improvement of housing in the U. S. We have in our country today six million substandard and two million dilapidated housing units. They are located in old and decaying urban neighborhoods and in rural pockets having little or no economic base. The solution of the housing problem can be approached from the demand or from the supply side.

To strengthen the demand for houses, low-income families must be given income subsidies which would enable them to rent or buy decent places to live. The minimum income would be such a solution. Public housing is another attempted solution. Offering loans to builders at low interest rates

would enable homeowners to sell or rent housing units below the present market level.

To strengthen the supply, government policy must encourage increasing productivity by subsidizing construction research, by discouraging restrictive building codes and work rules, by changing zoning laws, and by widening mortgage guarantees.

The Housing Act of 1949 and the Housing and Urban Development Act of 1968 both identified quantitative and qualitative goals for the government. The 1949 Housing Act established the goal of a decent home for every American family. The 1968 Housing and Urban Development Act added the quantitative goals of 26 million housing units for the years 1969-1978 and six million housing units for low- and moderate-income families. To achieve such a goal, there are two alternatives open to the American people or to the government. The first alternative is to accelerate economic growth. This may add to urban problems and to the problems of the environment. The other alternative is to accelerate economic growth. This may add to urban problems and to the problems of the environment. The other alternative is to reallocate resources from one area of economic activity to another. To make a proper choice and a political decision satisfactory to all interests is a complicated task.

We stated at the very beginning that our social system, since the days of our early history, was a goal-oriented system. The foremost thing the writers of our Constitution had on their minds was to found a nation and establish a political climate favorable to economic growth. Immigration, western expansion, and public education have been promoted to achieve a higher standard of living for the American people. The goals which have been established and reappraised throughout our history have been isolated goals. The nation has not given enough attention to the impact of any one program upon the other areas of human life. We were proud of our factories, and the billowing smoke from the factories' chimneys was a symbol of progress. Suddenly we became aware of the consequences of these narrow and isolated goals. The successes created problems. The expanding industry created air pollution and water pollution. Expanding mining resulted in erosion. The increasing convenience of automobile transportation resulted in the building of more and more highways and covering the green landscape with concrete. Our success in building big cities brought forth congestion on an unprecedented scale and this affected people's physical and mental health.

Our society has rejected the isolated programs. Society today wants to have scientific and technological progress. Society also wants to have the institutions which serve these goals be the servants to human values and human qualities.

Young people think that a new "humanism" is on the horizon, and that our institutions will become more responsive and more effective in their service to man. Many important adjustments must be made to put our social system on the right course leading to the new age of humanism.

First, the individual must be ready to sacrifice personal choices so that, with the resources saved, the broader, humanistic goals can be promoted.

Second, society must learn how to use the expanding knowledge not for destruction and harm to man but for the benefit of man.

Third, society must allocate more of its resources to predicting future trends so that man can anticipate events instead of adjusting to unexpected events.

Fourth, society must develop the wisdom to change our institutions in such a way that these institutions will facilitate the growth of knowledge within the framework of our newly evolving humanistic values.

Fifth, man has to learn how to live in a society where quickly expanding knowledge and communication will put increasing pressure on our culture to change at a faster and faster rate.

Finally, the members of the society have to increase their participation in public dialogues, since the people and the government are the ones who must decide what kind of country they want. The more the individual participates in such dialogues the greater will be the assurance that the social system of the future will reflect the dreams and the ambitions of the American people.

## Classroom Ideas for Teachers

1. To help students understand the importance of looking ahead for technological change, the class may investigate the impact of these developments on the quality of life: new communication, weather modification, ocean research, biological research, and other recent scientific developments. As a takeoff for research the committees may use the statements of the National Goals Research Staff published in Toward Balanced Growth: Quantity with Quality, pp. 213-215.

2. To help students acquaint themselves with the U. S. Department of Labor publications, the class may read "The U. S. Economy in 1980" (a summary of Bureau of Labor Statistics Projections--Bulletin 1673, U. S. Department of Labor).

3. To help students understand that value preferences play a significant role in establishing national priorities, students should act out the following:

   The Federal Government's income for the next year will be $250 billion. The government needs direction from the citizens in order to establish priorities.

   Class members are to be divided into six groups: farmers from the Midwest, banking and business interests of the East Coast, mayors of big cities, senior citizens, Blacks, and educators.

   Each of the above groups should identify ten priorities, ranked in order of importance, for the allocation of national revenue. Discussion can then take place on reasons underlying each group's different list. The activity can conclude with the entire class deciding upon a "compromised" list from the six groups.

4. To help students better understand the actual national priorities for fiscal year 1969, the teacher should consult the publication Changing National Priorities (Hearings before the Subcommittee on Economy in Government of the Joint Economic Committee: Congress of the United States, 91st Congress, 2nd Session, June, 1970, Part 1. In that report the teacher will find a statement by Mr. Murray L. Weidenbaum, Assistant Secretary of the Treasury for Economic Policy (pp. 40-75). In his statement Mr. Weidenbaum presented a list of the top fourteen priorities of the U. S. Government ranked in order of the amount spent on each in 1969 in direct outlays. Those fourteen are:

1. National Defense
2. Income Security
3. Interest
4. Health
5. Commerce and Transportation
6. Veterans
7. Education and Manpower
8. Agriculture
9. Space
10. International Relations
11. General Government
12. Natural Resources
13. Housing
14. Aid to States

The teacher should reproduce the above list on the blackboard in a random order--stating to the class that the above represents the national priority list for 1969.

The class will reconstruct the list of fourteen in terms of their own priorities and place them on the board. At that time the teacher will reveal the "correct" list of national priorities. Class discussion may then follow on the reasons underlying the discrepancies between the official list and the student lists.

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